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10/724,605	12/02/2003	Masaki Tokioka	03500.017806	3712
5514	7590	12/28/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			HEALD, ROBYN SUE	
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1733

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/724,605

Applicant(s)

TOKIOKA ET AL.

Examiner

Robyn S. Heald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/21/05, 02/06/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: the term "flit" glass 6 is referred to throughout the specification as the bonding material between the frame 3 and the face plate 1. One skilled in the art would appreciate that this is an inadvertent error and that the term is meant to be "frit" glass, which is the material commonly used in the art.

Appropriate correction is required. Correction of the terminology will not result in a new matter rejection in upcoming examinations.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19 and 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 19 and 20 provide for the use of the methods of claims 1 and 12, respectively, where the claims recite "a method of manufacturing an image display apparatus" by using the methods set forth in the respective claims, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it

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merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 19 and 20 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 3, 6, and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Haven et al. (U.S. Patent 2,235,681).

With respect to claim 1, Haven et al. discloses a method of manufacturing an airtight container (column 1, lines 13-20), comprising setting a member 29; supplying a seal bonding material 93 and 94 (91 in figures 17 and 18) to a portion to be a corner portion formed by the substrates 26, 27 and the member 29; and after setting the member 29 to the substrate 26 or 27 (or 34 in figure 20), forming a closed bonding line by locally heating the seal bonding material 93, 94 to a temperature equal to or higher

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than a temperature that allows the airtight bonding and then curing the seal bonding material 93, 94 (figures 2 and 17-20, column 2, lines 40-54, column 9, lines 59-62, column 10, lines 35-65, and column 11, lines 29-44).

Regarding claim 2, the step of forming the closed bonding line comprises performing the airtight bonding for each small region at a time (figure 19 and column 10, lines 35-65).

Regarding claim 3, the substrate 34 is one of a pair of mutually opposing substrates 26 and 27, and the member 29 is a frame fixed to the other substrate (figures 2, 19, and 20, and column 11, lines 39-44).

Regarding claim 6, the seal bonding material 93, 94 is a low-melting material (column 8, lines 47-60).

Regarding claim 8, the method further comprises forming a base film 88 in a location where the seal bonding material 93, 94 is to be arranged, the base film 88 being formed of a material having a good wettability with the seal bonding material 93, 94 (figures 19, 20, column 8, lines 47-50, and column 10, lines 66, thru column 11, line 4).

Regarding claim 9, the method further comprises heat-melting the seal bonding material 94 indirectly by heating the base film 88 (figures 19, 20, and column 11, lines 13-22).

Regarding claim 10, the seal bonding material 91 is molded into a solid state (figures 17, 18, and column 9, lines 59-67).

Regarding claim 11, the seal bonding members 93, 94 have a penetration length shorter than a contact length over which the seal bonding members 93, 94 contacts the member 29 (figures 19, 20).

7. Claims 12, 18, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kang et al. (U.S. Patent 6,828,731).

With respect to claim 12, Kang et al. discloses a method of manufacturing an airtight container, comprising setting a member 31; after setting the member 31 to the substrate 11, 12, forming a closed bonding line by performing airtight bonding of each of the substrate 11, 12 and the member 31 with a seal bonding material 22, by supplying to a corner portion formed by the substrate 11, 12 and the member 31, the seal bonding material 22 that is heated to a temperature equal to or higher than a temperature that allows the airtight bonding and then curing the seal bonding material 93, 94 (figure 3 and column 5, lines 11-44).

Regarding claim 18, the seal bonding member 22 have a penetration length shorter than a contact length over which the seal bonding member 22 contacts the member 31 (figure 3).

Regarding claim 20, Kang et al. discloses a method of manufacturing an image display apparatus by using the method of claim 12 (figure 2, column 1, lines 17-21, and column 5, line 12).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. in view of Kim (U.S. Patent 6,006,003).

Regarding claim 4, Haven et al. discloses a method for manufacturing an air and moisture-tight space between two substrates (column 1, lines 13-20), but he is silent about being able to perform the manufacturing under a vacuum atmosphere. It is a commonly known method to use a vacuum atmosphere when manufacturing airtight containers, like that taught in Kim. Kim discloses the manufacturing of an airtight container by sealing a space between two substrates 21 and 26 around the peripheral edges. The manufacturing is performed within a vacuum chamber 33 (figure 5, abstract, column 1, lines 39-41, and column 3, lines 34-40).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to perform the method of manufacturing the airtight container in Haven et al. under a vacuum atmosphere, like that of Kim, because doing so would prevent the introduction of moisture and foreign matter into the product and in turn allow for ease of manufacturing.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. in view of Woodard et al. (U.S. Patent 5,308,662).

Regarding claim 7, Haven et al. discloses a member 29 that is used as a spacer between substrates 26 and 27 (figure 2) but does not disclose the criticality of the shape of the member 29. One skilled in the art would appreciate that the shape of the member 29 is not critical to the invention, and can therefore be any shape as long as it maintains its function as an airtight spacer. Many spacers used in the art are made with grooves therein, like that taught by Woodard et al., disclosing a method of manufacturing an airtight space by joining two substrates 12 and 14 by sealing a grooved spacer 24 therebetween (figure 1, column 1, lines 13-21, and column 3, lines 17-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a member 29 that would create a corner portion comprising a grooved portion formed therein, like that of Woodard et al., because using such a member would help anchor the sealing material 91 and create a stronger bond between the substrates 26 and 27 and member 29.

11. Claims 12-14, 17, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. in view of Hasegawa et al. (U.S. Patent 6,621,220).

With respect to claim 12, Haven et al. discloses a method of manufacturing an airtight container (column 1, lines 13-20), comprising setting a member 29; after setting the member 29 to the substrate 26 or 27 (or 34 in figure 20), forming a closed bonding line by performing airtight bonding of each of the substrate 26 or 27 and the member 29 with a seal bonding material 93, 94 (91 in figures 17 and 18), the seal bonding material 93, 94 that is heated to a temperature equal to or higher than a temperature that allows the airtight bonding and then curing the seal bonding material 93, 94 (figures 2 and 17-



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20, column 2, lines 40-54, column 9, lines 59-62, column 10, lines 35-65, and column 11, lines 29-44). Haven et al. discloses that the sealing material 91 is supplied to what will be a corner portion between substrate 34 and member 29 (figures 17-20 and column 9, lines 59-68), but is silent as to whether the sealing material 91 can be applied to the corner portion once the member 29 meets substrate 34.

It is well known in the art to use a sealing material, like that of Haven et al., that has been preformed into a solid shape, such as a wire, so that the sealing material may be applied and heated at a corner portion after a member and substrate meet. Such a material is taught by Hasagewa et al., disclosing the use of a low-melting metal, that has been molded into an arbitrary shape, for the joining of a member 3 and a substrate 2 or 4 once they are abutted to each other at a corner portion (figure 2, column 4, lines 33-37, column 5, lines 60-62, column 6, lines 59-67, column 12, lines 50-53, column 15, lines 29-33, and column 17, lines 15-19).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention apply the sealing material 91, that has been molded into a solid shape like that of Hasegawa et al., at the corner portion once the member 29 meets substrate 34, because doing so would save the time used from having to apply the sealing material 91 to the member 29 before the joining step.

Regarding claim 13, since the same material 91 can be used for sealing of the member 29 to substrate 34 whether it is applied before or after abutment the same step of forming the closed bonding line comprises performing the airtight bonding for each small region at a time (figure 19 and column 10, lines 35-65) may be used.

Regarding claim 14, the substrate 34 is one of a pair of mutually opposing substrates 26 and 27, and the member 29 is a frame fixed to the other substrate (figures 2, 19, and 20, and column 11, lines 39-44).

Regarding claim 17, the method further comprises forming a base film 88 in a location where the seal bonding material 93, 94 is to be arranged, the base film 88 being formed of a material having a good wettability with the seal bonding material 93, 94 (figures 19, 20, column 8, lines 47-50, and column 10, lines 66, thru column 11, line 4).

Regarding claim 18, Regarding claim 11, the seal bonding members 93, 94 have a penetration length shorter than a contact length over which the seal bonding members 93, 94 contacts the member 29 (figures 19, 20).

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. and Hasegawa et al. as applied to claim 12 above, and further in view of Kim.

Regarding claim 15, Haven et al. discloses a method for manufacturing an air and moisture-tight space between two substrates (column 1, lines 13-20), but he is silent about being able to perform the manufacturing under a vacuum atmosphere. It is a commonly known method to use a vacuum atmosphere when manufacturing airtight containers, like that taught in Kim. Kim discloses the manufacturing of an airtight container by sealing a space between two substrates 21 and 26 around the peripheral edges. The manufacturing is performed within a vacuum chamber 33 (figure 5, abstract, column 1, lines 39-41, and column 3, lines 34-40).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to perform the method of manufacturing the airtight container in Haven et al. under a vacuum atmosphere, like that of Kim, because doing so would prevent the introduction of moisture and foreign matter into the product and in turn allow for ease of manufacturing.

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. and Hasegawa et al. as applied to claim 12 above, and further in view of Woodard et al.

Regarding claim 16, Haven et al. discloses a member 29 that is used as a spacer between substrates 26 and 27 (figure 2) but does not disclose the criticality of the shape of the member 29. One skilled in the art would appreciate that the shape of the member 29 is not critical to the invention, and can therefore be any shape as long as it maintains its function as an airtight spacer. Many spacers used in the art are made with grooves therein, like that taught by Woodard et al., disclosing a method of manufacturing an airtight space by joining two substrates 12 and 14 by sealing a grooved spacer 24 therebetween (figure 1, column 1, lines 13-21, and column 3, lines 17-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a member 29 that would create a corner portion comprising a grooved portion formed therein, like that of Woodard et al., because using such a member would help anchor the sealing material 91 and create a stronger bond between the substrates 26 and 27 and member 29.

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14. Claims 1, 2, 5, 11, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. in view of Nishimura (U.S. Patent 6,309,272).

With respect to claim 1, Kang et al. discloses a method of manufacturing an airtight container, comprising setting a member 31; supplying a seal bonding material 22 to a corner portion formed by substrates 11, 12 and member 31; after setting the member 31 to the substrate 11, 12, forming a closed bonding line by performing airtight bonding of each of the substrate 11, 12 and the member 31 by heating a seal bonding material 22 to a temperature equal to or higher than a temperature that allows the airtight bonding and then curing the seal bonding material 93, 94 (figure 3 and column 5, lines 11-44). Although Kang et al. describes the heating of sealing material 22, the disclosure is not specific about localized heating.

Localized heating is commonly known in the art for heating materials, like that used by Kang et al, for sealing together substrates to form airtight containers. This concept is taught by Nishimura, who discloses the joining of two substrates 81 and 82 by frame 89 and sealing the corner portions with sealing material 80, 90 by localized heating (figure 8B, column 11, lines 23-30, and column 12, lines 23-25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to locally heat the sealing material 22 of Kang et al., because such a method helps to control the quality of the airtight seal.

Regarding claim 2, Nishimura discloses that the sealing material 80, 90 (132 in figure 20) is heated and sealed for each small region at a time to form the closed bonding line (column 23, lines 11-14).

Regarding claim 5, Nishimura discloses the use of photoirradiation in performing the local heating (column 12, lines 23-25, and column 25, lines 30-31).

Regarding claim 11, the seal bonding member 22 have a penetration length shorter than a contact length over which the seal bonding member 22 contacts the member 31 (figure 3).

Regarding claim 13, Nishimura discloses that the sealing material 80, 90 (132 in figure 20) is heated and sealed for each small region at a time to form the closed bonding line (column 23, lines 11-14).

Regarding claim 19, Kang et al. discloses a method of manufacturing an image display apparatus by using the method of claim 1 (figure 2, column 1, lines 17-21, and column 5, line 12).

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. and Nishimura as applied to claim 1 above, and further in view of Kim.

Regarding claim 4, Kang et al. discloses a method for manufacturing an airtight space between two substrates 11 and 12 (column 5, lines 11-43), but he is silent about being able to perform the manufacturing under a vacuum atmosphere. It is a commonly known method to use a vacuum atmosphere when manufacturing airtight containers, like that taught in Kim. Kim discloses the manufacturing of an airtight container by sealing a space between two substrates 21 and 26 around the peripheral edges. The manufacturing is performed within a vacuum chamber 33 (figure 5, abstract, column 1, lines 39-41, and column 3, lines 34-40).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to perform the method of manufacturing the airtight container in Haven et al. under a vacuum atmosphere, like that of Kim, because doing so would prevent the introduction of moisture and foreign matter into the product and in turn allow for ease of manufacturing.

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. and Nishimura as applied to claim 1 above, and further in view of Woodard et al.

Regarding claim 7, Kang et al. discloses a member 31 that is used as a partition and a non-light emitting zone between substrates 11 and 12 (figure 3) but does not disclose the criticality of the shape of the member 31. One skilled in the art would appreciate that the shape of the member 31 is not critical to the invention, and can therefore be any shape as long as it maintains its function in forming an airtight space. Many partitions used in the art of manufacturing airtight containers are made of various shapes that form grooves in the corner portion, like that taught by Woodard et al. disclosing a method of manufacturing an airtight space by joining two substrates 12 and 14 by sealing a grooved spacer 24 therebetween (figure 1, column 1, lines 13-21, and column 3, lines 17-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a member 31 that would create a corner portion comprising a grooved portion formed therein, like that of Woodard et al., because using such a member would help anchor the sealing material 91 and create a stronger bond between the substrates 11 and 12 and member 31.

17. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knag et al. in view of Kim.

Regarding claim 15, Kang et al. discloses a method for manufacturing an airtight space between two substrates 11 and 12 (column 5, lines 11-43), but he is silent about being able to perform the manufacturing under a vacuum atmosphere. It is a commonly known method to use a vacuum atmosphere when manufacturing airtight containers, like that taught in Kim. Kim discloses the manufacturing of an airtight container by sealing a space between two substrates 21 and 26 around the peripheral edges. The manufacturing is performed within a vacuum chamber 33 (figure 5, abstract, column 1, lines 39-41, and column 3, lines 34-40).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to perform the method of manufacturing the airtight container in Haven et al. under a vacuum atmosphere, like that of Kim, because doing so would prevent the introduction of moisture and foreign matter into the product and in turn allow for ease of manufacturing.

18. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. in view of Woodard et al.

Regarding claim 16, Kang et al. discloses a member 31 that is used as a partition and a non-light emitting zone between substrates 11 and 12 (figure 3) but does not disclose the criticality of the shape of the member 31. One skilled in the art would appreciate that the shape of the member 31 is not critical to the invention, and can therefore be any shape as long as it maintains its function in forming an airtight space.

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Many partitions used in the art of manufacturing airtight containers are made of various shapes that form grooves in the corner portion, like that taught by Woodard et al. disclosing a method of manufacturing an airtight space by joining two substrates 12 and 14 by sealing a grooved spacer 24 therebetween (figure 1, column 1, lines 13-21, and column 3, lines 17-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a member 31 that would create a corner portion comprising a grooved portion formed therein, like that of Woodard et al., because using such a member would help anchor the sealing material 91 and create a stronger bond between the substrates 11 and 12 and member 31.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Robyn S. Heald** whose telephone number is **571-272-2362**. The examiner can normally be reached on Mon-Thur, 8:00-5:30; every second Fri, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rick Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robyn S. Heald  
Examiner  
Art Unit 1733

Jessica L. Rossi  
Primary Examiner  
Art Unit 1733

JESSICA ROSSI  
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Jessica Rossi', written over the printed name and title.

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